

NOTES ON AUSTRALIAN DIPTERA. XXVI.

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(Communicated by Dr. G. A. Waterhouse.)

(Three Text-figures.)

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Family OCHTHIPHILIDAE.

This group has been variously treated by systematists, in some cases as a subfamily, and in others either as a tribe, or as a family. In his most recent paper on the families of European Diptera, Hendel has used the latter category and called it Chamaemyiidae. In two previous papers in the present series I have had occasion to deal with the genus revised below, and in both cases I referred it to the subfamily Ochthiphilinae, placing the latter in the family Agromyzidae according to the more general practice in North America and Europe. It is my opinion that the placing of the group in Agromyzidae cannot be maintained, and I consequently tentatively accept it as a distinct family, distinguished from others in its neighbourhood by the lack of breaks in the costa, the complete auxiliary vein, presence of a cross-vein at base of discal cell and a complete anal cell, lack of vibrissae and of distinct hairs on the arista. This characterization places it close to the family Sapromyzidae, but the preapical tibial bristle is undeveloped, and the propleural is lacking.

For the information of Australian students of the acalyptrate Diptera, I present below a key to all the genera of this family known to me, many of them not as yet in the material from Australia which has reached me.

Key to the Genera.

1. Frontal orbits each with one or more well developed bristles 2
 Frontal orbits without bristles in front of the verticals 6
2. Head pointed at base of antennae, the face almost horizontal; wings distinctly spotted with fuscous *Acrometopia* Schiner
 Head not pointed at base of antennae, the face shorter and nearly, or quite, vertical; wings unspotted 3
3. Thoracic dorsum with four pairs of dorsocentral bristles; ocellar bristles absent; mesopleura bare *Chamaemyia* Panzer
 Thoracic dorsum with two or three pairs of dorsocentral bristles; ocellar bristles present, sometimes short and weak 4
4. Thoracic dorsum with three pairs of well developed dorsocentral bristles
 *Ochthiphila* Fallen
 Thoracic dorsum with but two pairs of well developed dorsocentral bristles 5
5. Mesopleura with one strong hind marginal bristle *Pseudodinia* Coquillett
 Mesopleura without a hind marginal bristle *Pseudoleucopis* Malloch
6. Arista lacking *Cryptochaetum* Rondani
 Arista present 7
7. Costa with small setulae on under surface; species glossy blue-black
 *Paraleucopis* Malloch
 Costa not setulose; species densely grey dusted *Leucopis* Meigen

Genus PSEUDOLEUCOPIS Malloch.

My reason for dealing with this genus at the present time is that I have received from Mr. A. Tonnoir examples of a species which he informs me may be of considerable economic value and, as he desires a specific name for it, I am compelled to make a revision of the described species and augment the published data thereon.

The species described as new in this paper bears a label stating that it was "bred" from *Eriococcus* sp. and, in his letter, the sender states that it is a parasite. I have another species labelled "parasite", referred to below, but I am inclined to suggest that the species are rather predaceous than parasitic, though the distinction is sometimes a rather fine one. The genus *Cryptochaetum* is undoubtedly parasitic in the larval stages, living inside its host, but *Leucopis*, on the other hand, is predaceous, feeding in the larval stages on various plant lice, and travelling about amongst its prey like a small syrphid larva which it rather closely resembles. Of course, in the case of the present genus, the larva may attach itself either outwardly or internally to a single host-specimen and thus be rankable as a true parasite. In this latter case its efficacy would be much less than if it were predaceous and destroyed a number instead of but one specimen of the species upon which it preys. However, these matters are of economic and not systematic importance and, aside from merely referring to them, I give them no weight herein.

I have not previously presented a key to the species of this genus and to make it possible for students to recognize them without referring back to the original descriptions, I do so now.

Key to the Species.

1. Abdomen with the tergites conspicuously bicoloured, deep velvety-black at bases and densely whitish-grey-dusted at apices; third antennal segment sharply angulate at upper, broadly rounded off at lower apical extremity *fasiventris* Malloch
- Abdomen not conspicuously bicoloured on dorsum, either entirely shining black or with slight grey-dusting which is not confined to apices of the tergites; third antennal segment equally broadly rounded at upper and lower apical extremities 2
2. Frontal orbits when seen from behind narrow, grey-dusted to base of upper orbital from upper extremity, from there to lower orbital very narrowly or not at all grey-dusted, slightly so at base of the bristle, and practically without dusting from there to anterior margin; face with a linear carina above, which becomes greatly elevated to epistome, and glossy-black on each side below; tibiae largely, tarsi entirely, testaceous yellow *magnicornis* Malloch
- Frontal orbits when seen from behind grey-dusted on their entire extent, sometimes narrowed above or below, but never without a broad grey portion between the orbital bristles; face with a linear carina on upper half, but slightly, or not at all, elevated in centre below, and entirely dull-grey-dusted 3
3. Frons distinctly longer than its width at vertex, the latter distinctly less than one-third of the head-width, interfrontalia when seen from behind dull black, much darker than the grey-dusted orbits, the latter reduced to a mere line opposite posterior ocelli; ocellar bristles much weaker and shorter than upper pair of fronto-orbitals *flavitaris* Malloch
- Frons as wide as long, at vertex much more than one-third of the head-width, interfrontalia when seen from behind almost as densely grey-dusted as the orbits, the latter not attenuated behind; ocellar bristles at least as long and strong as the upper pair of fronto-orbitals *benefica*, n. sp.

PSEUDOLEUCOPIS FASCIVENTRIS Malloch.

Besides the type material from Waterfall, N.S.W., I have a male from Cronulla, N.S.W., which differs from the former in having the basal black fascia on visible tergites 2 to 4 carried over the lateral curves instead of tapering off posteriorly and ceasing at the lateral curve on anterior margin. This may represent a distinct species, but the third antennal segment is similar to that of the type, and the face has the same raised vertical line on the upper half. The inner cross-vein of the wing is nearer to the middle of the discal cell than in the other group, sometimes even a little basad of the middle, and the penultimate section of fourth vein is thus almost half as long as the ultimate section, while in the other species of the genus listed below the inner cross-vein is distinctly beyond middle of the discal cell and the penultimate section of fourth vein is always much less than half as long as the ultimate one.

PSEUDOLEUCOPIS MAGNICORNIS Malloch.

This species is readily distinguished from the preceding one by the rounded apex of the third antennal segment, the elevated lower portion of the face with its glossy-black colour, and the paler legs.

Described from Sydney, N.S.W.

PSEUDOLEUCOPIS FLAVITARSIS Malloch.

I have seen only the type and one other specimen of this species. There is no record of the larval habits of the type, but the additional specimen has a label on it with the following notation: "Parasite on Mealy-bug on *Ac. linearis*".

PSEUDOLEUCOPIS BENEFICA, n. sp.

♂, ♀. Similar in general coloration to *flavitarsis*, but the frons is more evenly pale-grey-dusted when seen from behind, the mesonotum has traces of two submedian brownish vittae on anterior half and two fainter outer vittae, and the apical segment of each tarsus is slightly infuscated.

Structurally the two species are very similar, but the head seen from above is differently proportioned, as indicated in the foregoing key to the species, the inner vertical pair of bristles is proportionately longer and erect and incurved, not proclinate and incurved as in *flavitarsis*, the portion of the frontal orbits anterior to the lower bristle is less copiously haired, and the frons is not appreciably widened anteriorly as in that species. The thoracic dorsum is not so closely haired as in *flavitarsis*, but otherwise they agree very closely.

Length, 2.5 mm.

Type, male, allotype, and two paratypes, Black Mt., F.C.T., December, 1929, "Bred from *Eriococcus* sp." (A. L. Tonnoir).

Genus CRYPTOCHAETUM Rondani.

I have already dealt with the species of this genus known to me from Australia in a paper in this series.

Genus LEUCOPIS Meigen.

I have not seen any species of this genus from Australia, but it very probably occurs here as it is almost cosmopolitan in distribution. I have divided the genus into three subgenera and should it occur in Australia it will be of interest to find out which subgenus, or subgenera, may appear.



Genus OCHTHIPHILA Fallen.

This genus is almost as widely distributed as *Leucopis*, but it is unknown to me from Australia and its life-history details have not been clearly established.

Genus CHAMAEMYIA Panzer.

This genus occurs in the old world and I have taken it in the United States. It was for many years considered as a synonym of *Ochthiphila*, but it is quite distinct.

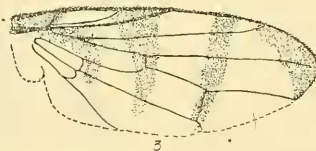
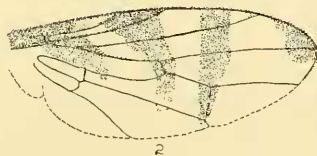
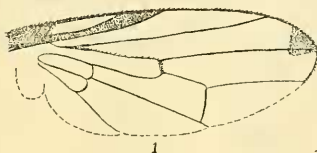
Family ORTALIDAE.

Genus RIVELLIA Robineau-Desvoidy.

Up to the present time I have seen three species of this genus from Australia. They may be distinguished from each other as in the key presented below.

Key to the Species.

1. Wing without black fasciae, with only the following black marks: Along costa to slightly beyond humeral cross-vein, in the entire subcostal cell, and a spot on tip of third vein touching costa which extends from about midway between apices of second and third veins to a little below apex of latter, but never to fourth vein (Text-fig. 1) *connata* Thomson.
 Wing with more extensive black markings, the basal and apical marks much larger, and two complete, or almost complete, fasciae centrally, one over inner cross-vein, the other over outer cross-vein 2
2. Apical dark mark on wing never encroaching on tip of marginal cell, though there may be an isolated dark spot there, and not extending more than midway across first posterior cell near its apex, costal cell almost uniformly dark; femora and tibiae black, knees yellow (Text-fig. 2) *isolata*, n. sp.
 Apical dark mark on wing more elongate, always encroaching upon apex of marginal cell and extending over entire apex of first posterior cell to apex of fourth vein, apical half or more of costal cell hyaline (Text-fig. 3); legs generally yellow *virgo* Hendel



Text-fig. 1.—Wing of *Rivellia connata*.
 Text-fig. 2.—Wing of *Rivellia isolata*.
 Text-fig. 3.—Wing of *Rivellia virgo*.

RIVELLIA CONNATA Thomson.

I have already recorded this species from Australia. It occurs in the Samoan and Fiji Islands.

RIVELLIA VIRGO Hendel.

This species is very similar to the next one, comparative characters being given under the description of the latter and in the foregoing key. Wing as Text-figure 3.

Locality: Herberton, N. Qld., January, 1911, 3,700 feet (Dodd). In Lichtwardt collection, Deutsches Entomologisches Museum, Berlin-Dahlem, Germany.

RIVELLIA ISOLATA, n. sp.

♂, ♀. Frons brown, becoming orange in front, orbits white-dusted except on the upper fourth which, like the ocellar triangle, is shining black; face orange, infuscated above, and slightly grey-dusted; antennae dull-orange, third segment darkened apically; arista black; palpi fuscous, paler at apices. Thorax dark metallic-blue, slightly obscured by grey-dusting. Abdomen concolorous with thorax, without dusting, the surface roughened or granulose, and rather densely covered with decumbent black hairs. Legs black, apices of coxae and femora, and all tarsi except their apices, fulvous yellow. Wings hyaline, with black markings as in Text-figure 2. Calyptrae pale. Halteres missing in type material.

Vertex with four strong bristles, the outer pair divergent, inner pair cruciate; two orbitals present on each side, which are much shorter than the verticals; ocellars very short and fine; arista bare; third antennal segment extending to the mouth-margin. Thorax with well developed humeral bristle, one pair of prescutellar acrostichal and dorsocentral bristles, and four strong marginal scutellars. Legs normal, mid femur of male with a series of pale bristly hairs on the posteroventral surface.

Length, 4-4.5 mm.

Type, female, Illawarra, N.S.W.; allotype, Botany Bay, N.S.W. (H. Peterson). Material submitted to me by C. F. Baker some years ago and in my collection.

Most nearly related to *virgo*, but readily distinguished from it by means of the wing markings. The wing figured is that of the female type, the male lacks a well defined black dot at apex of the marginal cell, but possibly this character is variable and not a sexual one.
